



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,866	01/08/2004	Juha Virtanen	2534-00076	6124
26753	7590	02/14/2006		
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202			EXAMINER KAHELIN, MICHAEL WILLIAM	
			ART UNIT 3762	PAPER NUMBER

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	<b>Application No.</b> 10/753,866	<b>Applicant(s)</b> VIRTANEN, JUHA	
	<b>Examiner</b> Michael Kahelin	<b>Art Unit</b> 3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-11 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 7,8,17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The amendments to the abstract are acknowledged and accepted.

### ***Claim Objections***

3. The amendments to claims 5 and 11 in respect to the objections are acknowledged and accepted. The objections to claims 5 and 11 are withdrawn.
4. Claims 7, 8, 17, and 18 are objected to because of the following informalities:  
"which" should be inserted before "is". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1, 3-9, and 6-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regards to claim 1, the "means for selectively grounding" and "means for detecting" are lacking a structural relationship to

Art Unit: 3762

the other elements of the claimed invention. In regards to claims 1 and 5, in the office action dated 9/14/2005, Examiner interpreted, and Applicant confirmed in the reply filed 1/17/2006, that Applicant is claiming only "a grounding arrangement comprising a current limiting circuit exhibiting non-linear voltage-current characteristics". As such, the preamble of the claim is being given no patentable weight and the elements in the preamble are not positively recited. Therefore, "connector element" in claims 6, 7, 8, 9, 16, 17, and 18, "new measuring electrode" in claim 4, and "lead set connector" in claim 9 are all inferentially included. It is suggested to first positively recite all elements of the apparatus for which Applicant is seeking patent protection before further limiting them.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3-11, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Simon et al. (US 4,577,639 hereinafter "Simon").

9. In regards to claims 1 and 5, the two newly added limitations are that the grounding arrangement further comprises a "means for selectively grounding" and a "means for detecting". Examiner is interpreting these statements as invoking 35 U.S.C. 112(6) wherein the two "means" are the disclosed switches and comparator, respectively. A prior art element can be shown to be equivalent to a means-plus-

Art Unit: 3762

function limitation if the prior art element is a structural equivalent to the corresponding element disclosed in the specification (MPEP 2183). Therefore, Examiner is interpreting claim 1 to recite, "a grounding arrangement comprising a current limiting circuit exhibiting non-linear voltage-current characteristics having a plurality of switches (and equivalents) and a comparator (and equivalents)". Simon discloses a grounding arrangement (Fig. 1), comprising a current-limiting circuit exhibiting non-linear voltage-current characteristics (Fig. 3) (322, 324, 326, and 328 exhibit non-linearity at saturation), a plurality of switches (332, 334, 336, and 310), and a comparator (352, 354, 356, and 358). Additionally, the grounding arrangement is used for detecting whether connector elements are used for recording ECG signals (abstract) (grounding lead wire shields is claimed in the alternative).

10. In regards to claim 3, the current limiting circuit includes a current-limited voltage source ( $V_B$ ).

11. In regards to claim 4, the current limiting circuit has a means for detecting the addition of a new measuring electrode (col. 6, line 61).

12. In regards to claims 6 and 16, there are individual circuits for each connector (322, 324, 326, and 328).

13. In regards to claims 7, 8, 17 and 18, the same current-limiting circuit is used for more than one and all connector elements (Fig. 3). In this case, Examiner is interpreting the entire circuit in Figure 3 to be the "current-limiting circuit".

14. In regards to claim 9, the arrangement includes a detecting circuit (352) having an input connected to the lead set connector (302 to the non-inverting input of 352) for

Art Unit: 3762

detection of new measuring electrodes (col. 4, line 45 and col. 6, line 61). Please note that, although the comparator detects lead failure, as described in col. 4, line 45, the same comparator is used for detection of the addition of a new electrode, as disclosed in col. 6, line 61.

15. In regards to claims 10 and 11, the detecting circuit (352, 354, 356, and 358) is a comparator, which is a form of an analog-to-digital converter because it supplies a binary (digital) indication to a microprocessor of the analog state of the measuring electrode. The comparator outputs binary low if the voltage on the non-inverting input is below the threshold set by  $V_B$ , and outputs binary high if the voltage is above the threshold.

### ***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3762

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kahelin whose telephone number is (571) 272-8688. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MWK



  
GEORGE R. EVANISKO  
PRIMARY EXAMINER

2/12/6